

August 28, 2019

Arcelor Mittal USA, Inc.
250 W US Highway 12
Burns Harbor, IN 46304-9745

Work Order No.: 19H0742

Re: Daily

Dear Teri Kirk:

Microbac Laboratories, Inc. - Chicagoland Division received 15 sample(s) on 8/13/2019 10:55:00AM for the analyses presented in the following report as Work Order 19H0742.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Ron Misiunas, Division Manager, at ron.misiunas@microbac.com.

Sincerely,
Microbac Laboratories, Inc.



Carey Gadzala
Project Manager

WORK ORDER SAMPLE SUMMARY

Date: *Wednesday, August 28, 2019*

Client: Arcelor Mittal USA, Inc.
Project: Daily
Lab Order: 19H0742

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
19H0742-01	011-Composite	011	08/12/2019 06:00	8/13/2019 10:55:00AM
19H0742-02	011-Grab	011	08/12/2019 06:00	8/13/2019 10:55:00AM
19H0742-03	001-Composite	001	08/12/2019 06:20	8/13/2019 10:55:00AM
19H0742-04	001-Grab	001	08/12/2019 06:20	8/13/2019 10:55:00AM
19H0742-05	Mixed Liquor-Grab	Mixed Liquor	08/13/2019 06:42	8/13/2019 10:55:00AM
19H0742-06	J-Box-Grab	J-Box	08/13/2019 06:39	8/13/2019 10:55:00AM
19H0742-07	RSB FT Overflow-Grab	RSB FT Overflow	08/13/2019 07:44	8/13/2019 10:55:00AM
19H0742-08	999-Grab	999	08/13/2019 07:30	8/13/2019 10:55:00AM
19H0742-09	002-Grab	002	08/12/2019 07:53	8/13/2019 10:55:00AM
19H0742-10	CM1-Grab	CM1	08/13/2019 00:00	8/13/2019 10:55:00AM
19H0742-11	CM2-Grab	CM2	08/13/2019 00:00	8/13/2019 10:55:00AM
19H0742-12	CM6-Grab	CM6	08/13/2019 00:00	8/13/2019 10:55:00AM
19H0742-13	HM1-Grab	HM1	08/13/2019 00:00	8/13/2019 10:55:00AM
19H0742-14	HM2-Grab	HM2	08/13/2019 00:00	8/13/2019 10:55:00AM
19H0742-15	HM3-Grab	HM3	08/13/2019 00:00	8/13/2019 10:55:00AM

Field Results

Date: *Wednesday, August 28, 2019*

Client: Arcelor Mittal USA, Inc.	Work Order: 19H0742
Client Project: Daily	
Client Sample ID: 011-Grab	Work Order/ID: 19H0742-02
Sample Description: 011	Sampled: 08/12/2019 06:00
Matrix: Aqueous	Received: 08/13/2019 10:55

Analyses	Result	Units
pH	8.2	pH Units

Client Sample ID: 001-Grab	Work Order/ID: 19H0742-04
Sample Description: 001	Sampled: 08/12/2019 06:20
Matrix: Aqueous	Received: 08/13/2019 10:55

Analyses	Result	Units
pH	8.1	pH Units

Client Sample ID: J-Box-Grab	Work Order/ID: 19H0742-06
Sample Description: J-Box	Sampled: 08/13/2019 06:39
Matrix: Aqueous	Received: 08/13/2019 10:55

Analyses	Result	Units
pH	8.7	pH Units

Client Sample ID: RSB FT Overflow-Grab	Work Order/ID: 19H0742-07
Sample Description: RSB FT Overflow	Sampled: 08/13/2019 07:44
Matrix: Aqueous	Received: 08/13/2019 10:55

Analyses	Result	Units
pH	9.1	pH Units

Client Sample ID: 999-Grab	Work Order/ID: 19H0742-08
Sample Description: 999	Sampled: 08/13/2019 07:30
Matrix: Aqueous	Received: 08/13/2019 10:55

Analyses	Result	Units
pH	8.2	pH Units

Client Sample ID: 002-Grab	Work Order/ID: 19H0742-09
Sample Description: 002	Sampled: 08/12/2019 07:53
Matrix: Aqueous	Received: 08/13/2019 10:55

Analyses	Result	Units
pH	8.3	pH Units

CASE NARRATIVE**Date:** *Wednesday, August 28, 2019*

Client: Arcelor Mittal USA, Inc.
Project: Daily
Lab Order: 19H0742

Report has been reissued to include NH₄, Cn and Free Cn for Outfall's 011 and 001 per the clients request.
8/28/19

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-01
Client Project:	Daily	Sampled:	08/12/2019 6:00
Client Sample ID:	011-Composite	Received:	08/13/2019 10:55
Sample Description:	011		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: SM 4500-CN C/E-1999			Analyst: ABG			
Total Cyanide		Prep Method: NA			Prep Date/Time: 08/21/2019 09:36			
Cyanide, Total	dij	A	0.19	0.0050		mg/L	1	08/21/2019 12:17
		Method: SW-846 9014			Analyst: AJR			
Free Cyanide		Prep Method: SW-846 9014			Prep Date/Time: 08/21/2019 09:07			
Free Cyanide		A	0.20	0.0062		mg/L	1	08/26/2019 12:14
		Method: EPA 350.1 Rev 2.0			Analyst: ABG			
Nitrogen, Ammonia as N		Prep Method: EPA 350.1 Rev 2.0			Prep Date/Time: 08/22/2019 04:56			
Nitrogen, Ammonia (As N)	di	A	1.2	0.10		mg/L	1	08/22/2019 10:45

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-03
Client Project:	Daily	Sampled:	08/12/2019 6:20
Client Sample ID:	001-Composite	Received:	08/13/2019 10:55
Sample Description:	001		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: SM 4500-CN C/E-1999					Analyst: ABG	
Total Cyanide		Prep Method: NA					Prep Date/Time: 08/21/2019 09:36	
Cyanide, Total	dij	A	0.14	0.0050		mg/L	1	08/21/2019 12:18
		Method: SW-846 9014					Analyst: AJR	
Free Cyanide		Prep Method: SW-846 9014					Prep Date/Time: 08/21/2019 09:07	
Free Cyanide		A	0.16	0.0062		mg/L	1	08/26/2019 12:19
		Method: EPA 350.1 Rev 2.0					Analyst: ABG	
Nitrogen, Ammonia as N		Prep Method: EPA 350.1 Rev 2.0					Prep Date/Time: 08/22/2019 04:56	
Nitrogen, Ammonia (As N)	di	A	1.0	0.10		mg/L	1	08/22/2019 10:47

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-05
Client Project:	Daily	Sampled:	08/13/2019 6:42
Client Sample ID:	Mixed Liquor-Grab	Received:	08/13/2019 10:55
Sample Description:	Mixed Liquor		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 2540 F-1997		Analyst: DAT			
Settleable Solids			Prep Method: SM 2540 F-1997		Prep Date/Time: 08/13/2019 11:16			
Settleable Solids	i	A	240	1.0		ml/L	1	08/13/2019 11:16
			Method: SM 2540 D-1997		Analyst: KMT			
Total Suspended Solids			Prep Method: SM 2540 D-1997		Prep Date/Time: 08/13/2019 11:28			
Total Suspended Solids	dij	A	2300	1.0		mg/L	1	08/13/2019 13:23

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-06
Client Project:	Daily	Sampled:	08/13/2019 6:39
Client Sample ID:	J-Box-Grab	Received:	08/13/2019 10:55
Sample Description:	J-Box		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 2540 D-1997				Analyst: KMT	
			Prep Method: SM 2540 D-1997				Prep Date/Time: 08/13/2019 11:28	
Total Suspended Solids								
Total Suspended Solids	dij	A	19	1.0		mg/L	1	08/13/2019 13:23

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-10
Client Project:	Daily	Sampled:	08/13/2019 0:00
Client Sample ID:	CM1-Grab	Received:	08/13/2019 10:55
Sample Description:	CM1		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 2540 D-1997				Analyst: KMT	
Total Suspended Solids			Prep Method: SM 2540 D-1997				Prep Date/Time: 08/13/2019 11:28	
Total Suspended Solids	dij	A	18	1.0		mg/L	1	08/13/2019 13:23

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-11
Client Project:	Daily	Sampled:	08/13/2019 0:00
Client Sample ID:	CM2-Grab	Received:	08/13/2019 10:55
Sample Description:	CM2		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 2540 D-1997				Analyst: KMT	
Total Suspended Solids			Prep Method: SM 2540 D-1997				Prep Date/Time: 08/13/2019 11:28	
Total Suspended Solids	dij	A	13	1.0		mg/L	1	08/13/2019 13:23

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-12
Client Project:	Daily	Sampled:	08/13/2019 0:00
Client Sample ID:	CM6-Grab	Received:	08/13/2019 10:55
Sample Description:	CM6		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 2540 D-1997				Analyst: KMT	
Total Suspended Solids			Prep Method: SM 2540 D-1997				Prep Date/Time: 08/13/2019 11:28	
Total Suspended Solids	dij	A	6.6	1.0		mg/L	1	08/13/2019 13:23

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-13
Client Project:	Daily	Sampled:	08/13/2019 0:00
Client Sample ID:	HM1-Grab	Received:	08/13/2019 10:55
Sample Description:	HM1		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 2540 D-1997				Analyst: KMT	
Total Suspended Solids			Prep Method: SM 2540 D-1997				Prep Date/Time: 08/13/2019 11:28	
Total Suspended Solids	dij	A	12	1.0		mg/L	1	08/13/2019 13:23

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-14
Client Project:	Daily	Sampled:	08/13/2019 0:00
Client Sample ID:	HM2-Grab	Received:	08/13/2019 10:55
Sample Description:	HM2		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 2540 D-1997					
			Prep Method: SM 2540 D-1997					
					Analyst: KMT			
Total Suspended Solids					Prep Date/Time: 08/13/2019 11:28			
Total Suspended Solids	dij	A	14	1.0		mg/L	1	08/13/2019 13:23

Analytical Results

Date: *Wednesday, August 28, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H0742-15
Client Project:	Daily	Sampled:	08/13/2019 0:00
Client Sample ID:	HM3-Grab	Received:	08/13/2019 10:55
Sample Description:	HM3		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 2540 D-1997				Analyst: KMT	
Total Suspended Solids			Prep Method: SM 2540 D-1997				Prep Date/Time: 08/13/2019 11:28	
Total Suspended Solids	dij	A	10	1.0		mg/L	1	08/13/2019 13:23

ANALYTE TYPES: (AT)

A, B = Target Analyte

I = Internal Standard

M = Summation Analyte

S = Surrogate

T = Tentatively Identified Compound (TIC, concentration estimated)

**Revised**
8/28/2019

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank

DUP = Method Duplicate

BS = Method Blank Spike

MS = Matrix Spike

ICB = Initial Calibration Blank

CCB = Continuing Calibration Blank

CRL = Client Required Reporting Limit

PDS = Post Digestion Spike

QCS = Quality Control Standard

ICSA = Interference Check Standard "A"

ICSAB = Interference Check Standard "AB"

BSD = Method Blank Spike Duplicate

MSD = Matrix Spike Duplicate

ICV = Initial Calibration Verification

CCV = Continuing Calibration Verification

OPR = Ongoing Precision and Recovery Standard

SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

d Illinois EPA drinking water, wastewater and solid waste analysis (#200064)

i Kansas Dept Health & Env. NELAP (#E-10397)

j Kentucky Wastewater Laboratory Certification Program (#108202)

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)**MDL:** Minimum Detection Limit**RL:** Reporting Limit**RPD:** Relative Percent Difference**U:** The analyte was analyzed for but was not detected above the reported quantitation limit. The quantitation limit has been adjusted for any dilution or concentration of the sample.

Cooler Receipt Log

Cooler ID: Default Cooler



Revised

8/28/2019

Cooler Inspection Checklist

Ice Present or not required?	Yes
Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes
Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes
Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes
Sample type identified on COC?	Yes
Correct type of Containers Received	Yes
Correct number of containers listed on COC?	Yes
Containers Intact?	Yes
COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes
Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes
Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes
Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes

Chain of Custody

ArcelorMittal Burns Harbor/Microbac Labs

Tuesday

Lab Work No: 19H0742

* Date Obtained: 8-13-19
 ** Sample Date: 8-12-19

Location	Time	Sampler	Type	Preserved	Cooled	Containers			Parameters	Comments
						Type	Qty	Vol. (ml)		
011 **	06:00	90	Comp	No	Yes	Glass	1	4000		01
			Grab	No	No	Plastic	1	500	pH	02
001 **	06:20		Comp	No	Yes	Glass	1	4000		03
			Grab	No	No	Plastic	1	125	pH	04
Mixed Liquor *	06:42		Grab	No	No	Plastic	1	2000	TSS, Settling	05
DIW-131 *	NA		Grab	No	No	Plastic	1	125	pH	X
J-Box *	06:39		Grab	No	No	Plastic	1	1000	TSS, pH	06
RSB FT Overflow *	07:44		Grab	No	No	Plastic	1	125	pH	07
999 *	07:30		Grab	No	No	Plastic	1	500	pH	08
002 **	07:53		Grab	No	No	Plastic	1	125	pH	09
SWTP *	NA	***	Grab	No	No	Plastic	76	1000	TSS	10-15

*** WPL is for previous sample date

**** Sample collected by Water Process personnel

No cm 3

4.4
 - 0.3

 4.1 °C

Relinquished by: *C. Dulin*
 Received by: *M - Ott*

Date: 8-13-19
 Date: 8/13/19

Time: 08:05
 Time: 0840

Env 2x Rev. 8 07/01/16 (TEK)



Microbac Laboratories, Inc. - Chicagoland Division

Total Residual Chlorine - Amperometric Titration - SM Method 4500-Cl E - 2000
for Arcelor Mittal - Burns Harbor

Date/Time: 8-12-19 0845
 Analyst: ASG
 pH Paper Lot #: 141626
 LCS ID: A9074

STD ID / Lot #
 KI Solution: 146367
 Acetate buffer: 129216
 PAO Titrant: 145348

Exp. Date
6-30-19
10-11-19
5-31-20

Exp. Date
11-20

Sample ID	Sample Vol. (mL)	pH (pH Units)	Titrant Start (mL)	Titrant Stop (mL)	Titrant Vol. (mL)	Result (mg/L)
Blank		4.0	0.00	0.00	0.00	0.00
LCS		4.0		0.08	0.08	0.08
Outfall 001		4.0		0.00	0.00	0.00
Outfall 002		4.0		0.00	0.00	0.00
Outfall 003		4.0		0.00	0.00	0.00
Outfall 011		4.0		0.00	0.00	0.00
Outfall 011 Dup						
Outfall 001 Dup		4.0		0.00	0.00	0.00

Date/Time: 8/17/19 0840
 Analyst: DAO
 pH Paper Lot #: HJ626
 LCS ID: A9074

STD ID / Lot #
 KI Solution: 146367
 Acetate buffer: 129216
 PAO Titrant: 145348

Exp. Date
6/30/19
10/11/19
5/31/20

Exp. Date
11/20

Sample ID	Sample Vol. (ml)	pH (pH Units)	Titrant Start (ml)	Titrant Stop (ml)	Titrant Vol. (ml)	Result (mg/L)
Blank	200	4.0	0.00	0.00	0.00	0.00
LCS		4.0		0.05	0.05	0.05
Outfall 001		4.0		0.00	0.00	0.00
Outfall 002		4.0		0.00	0.00	0.00
Outfall 003		4.0		0.00	0.00	0.00
Outfall 011						
Outfall 011 Dup		4.0		0.00	0.00	0.00
Outfall 002 Dup						

Chlorine, mg/L = (Titrant Vol., mL) (200 mL) / (Sample Vol., mL)

revision: a_01_2016

pH - METHOD 9045D

Arcelor Mittal /Burns Harbor NPDES

Sample ID	pH		Analyst	Date/Time of Analysis
Buffer ID: Meter ID:	4: 185909	7: 188312	10: 187680	
Calibration	④ ⑦ ⑩		BAO	8/13/19 0840
ICV	4 ⑦ 10	6.99		
Slope		99.9		
Lake 999		8.22		
Location 001		8.11		
Location 002		8.32		
Location 011		8.20		
WAL 1				
WAL 2				
SWTP J-Box		8.67		
DIW 131				
RSB		9.08		
Dup- RSB		9.06		
CCV		7.01	↓	↓

Sample ID	pH		Analyst	Date/Time of Analysis
Buffer ID: Meter ID:	4:	7:	10:	
Calibration	4 / 7 / 10			
ICV	4 / 7 / 10			
Slope				
Lake 999				
Location 001				
Location 002				
Location 011				
WAL 1				
WAL 2				
SWTP J-Box				
DIW 131				
RSB				
Dup-				
CCV				

